

We claim:

1. A method of determining the presence of an active drug in a fluid sample, said drug in its active state capable of modifying the activity level of an enzyme on a selected substrate, said method comprising the steps of:

5 providing a first fluid sample, said sample including said enzyme;  
adding a quantity of said selected substrate to said first fluid sample;  
measuring the activity level of said enzyme on said selected substrate; and  
determining the presence of said active drug by said measured activity level.

10 2. The method of claim 1 further comprising the step of comparing said measured activity level with a standard activity level.

15 3. The method of claim 2, said standard activity level representing the activity level of said enzyme on a known quantity of said selected substrate.

4. The method of claim 1 further comprising the step of correlating said measured activity level with the concentration of said active drug.

20 5. The method of claim 4, said correlating step including the step of comparing said measured activity level with a standard activity level.

6. The method of claim 5, said standard activity level representing the activity level of said enzyme on a known quantity of said selected substrate.

7. The method of claim 1, said enzyme activity level decreasing when said active drug is present.

8. The method of claim 1, said enzyme activity level increasing as the level of active drug in said sample decreases.

9. The method of claim 1, said enzyme activity level decreasing as the level of said active drug in said sample increases.

10. The method of claim 1, said drug being selected from the group consisting of ACE-inhibiting drugs.

11. A method of determining standard enzyme activity levels on a selected substrate comprising the steps of:

providing a sample containing said enzyme;

adding a known quantity of said selected substrate to said sample;

measuring the activity level of said enzymes on said selected substrate; and

using said measured activity level as said enzyme's standard activity level for said

known quantity of selected substrate.

12. A method of determining the presence of active ACE-inhibiting drugs present in a fluid sample, said ACE-inhibiting drugs in their active state being capable of modifying the activity level of a target enzyme on a selected substrate, said method comprising the steps of:

5           providing a first fluid sample;  
          adding a quantity of said selected substrate to said first fluid sample; and  
          determining the activity level of said target enzyme on said selected substrate in  
                  said fluid sample at a first time to provide a base line activity level.

10           13. The method of claim 12, further including the step of comparing said base  
line activity level with a standard activity level to determine the concentration of said active  
ACE-inhibiting drugs in said first fluid sample.

15           14. The method of claim 12, further including the step of determining the  
activity level of said target enzyme on said selected substrate in said fluid sample at a second  
time to provide a first activity level, said second time occurring after said first time.

          15. The method of claim 14, further including the step of comparing said base  
line activity level with said first activity level.

20           16. The method of claim 14, further including the step of comparing said first  
activity level with a standard activity level.

17. The method of claim 12, further including the steps of:

providing a second fluid sample;

adding a quantity of said selected substrate to said second fluid sample; and

determining the activity level of said target enzyme on said selected substrate in

said second fluid sample to provide a second activity level.

18. The method of claim 17, further including the step of comparing said first

activity level with said second activity level.

19. The method of claim 12, said first fluid sample comprising urine.

20. The method of claim 12, said base line level of activity being representative of said target enzyme's activity when no ACE-inhibiting drugs are present.

21. The method of claim 12, said base line level of activity being correlated with a known standard of active ACE-inhibiting drug concentration.

22. The method of claim 12, said ACE-inhibiting drugs being selected from the group consisting of benazepril, captopril, enalapril, fosinopril, lisinopril, quinapril, ramipril, andtrandolapril and combinations thereof.

23. The method of claim 12, said determining step including the step of measuring the optical density of said fluid sample.

24. The method of claim 12, said activity levels being correlated with the optical density at 340 nm.

25. A method of determining the presence of active beta-blocking drugs in a fluid sample, comprising the steps of:

providing a first fluid sample, said fluid sample containing a target ligand operable for binding to a specific receptor; and  
assaying said sample for the presence of said active beta-blocking drug.

26. The method of claim 25, said assaying step comprising the steps of:  
adding a quantity of labeled ligand to said fluid sample, said labeled ligand operable for binding to said specific receptor; and  
contacting said fluid sample containing said target ligand and said labeled ligand with a membrane expressing said specific receptor.

27. The method of claim 25, further comprising the step of determining the concentration of active beta-blocking drugs in said fluid sample.

28. The method of claim 27, further including the step of comparing said determined concentration of active beta-blocking drugs with a known standard of active beta-blocking drug concentration.

29. The method of claim 28, said known standard of active beta-blocking drug concentration being correlated with the concentration of active beta-blocking drugs present in said fluid after a known dosage of beta-blocking drugs is taken by a patient.

5 30. The method of claim 29, further comprising the step of determining if a patient is taking a prescribed dosage of beta-blocking drugs by comparing said determined concentration with said known dosage.

31. The method of claim 25, said fluid sample comprising urine.

32. The method of claim 28, said known standard being representative of said assay result when no beta-blocking drugs are present.

15 33. The method of claim 27, said specific receptor being selected from the group consisting of beta-adrenergic receptors.

34. The method of claim 33, said specific receptor being a B1 adrenergic receptor.

20 35. The method of claim 27, said determined concentration being correlated with a known standard of active beta-blocking drug concentration.

36. The method of claim 25, said beta-blocking drug being selected from the group consisting of atenolol, propranolol, metoprolol, nadolol, pindolol, timolol, carvedilol, and sotalol and combinations thereof.

5 37. The method of claim 27, said determining step including the steps of:  
contacting said sample with a receptor specific for beta-blockers and a labeled drug, said  
drug operable for indicating an interaction between said labeled drug and said  
determined drug with said receptor.

10 38. A method of determining the presence of active ACE-inhibiting drugs or  
the active metabolites thereof in a fluid sample, said method comprising the steps of:  
obtaining a fluid sample; and  
detecting ACE-inhibiting drugs in said sample using an assay capable of  
detecting said ACE-inhibiting drugs or said active metabolites thereof.

15 39. The method of claim 38, said ACE-inhibiting drugs being selected from  
the group consisting of benazepril, captopril, enalapril, fosinopril, lisinopril, quinopril, ramipril,  
andtrandolapril or combinations thereof.

20 40. The method of claim 38, said fluid sample comprising urine.

41. A method of determining the presence of an active drug in a fluid sample, said drug in its active state capable of binding with a selected receptor and inhibiting binding of a target ligand to said receptor, said method comprising the steps of:

providing a first fluid sample, said sample including said receptor;

adding a quantity of said target ligand to said first fluid sample;

measuring the binding activity level of said ligand to said receptor; and

determining the presence of said active drug by said measured binding activity level.

42. The method of claim 41 further comprising the step of comparing said measured binding activity level with a standard binding activity level.

43. The method of claim 42, said standard binding activity level representing the binding activity level of said receptor with a known quantity of said target ligand.

44. The method of claim 40 further comprising the step of correlating said measured binding activity level with the concentration of said active drug.

45. The method of claim 44, said correlating step including the step of comparing said measured binding activity level with a standard binding activity level.

46. The method of claim 45, said standard binding activity level representing the binding activity level of said receptor with a known quantity of said target ligand.



47. The method of claim 41, said measured binding activity level decreasing when said active drug is present.

48. The method of claim 41, said measured binding activity level increasing as the level of active drug in said sample decreases.

49. The method of claim 41, said measured binding activity level being inversely proportional to the level of said active drug in said sample.

50. The method of claim 41, said drug being selected from the group consisting of beta-blocking drugs.